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NOVEMBER 1989

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NOVEMBER 1989 VOLUME 169, No.11

CHILTON'S AUTOMOTIVE INDUSTRIES

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The best stamping teams in America again face the trusty AI stopwatch in our annual Die Change Challenge. Now in its fourth season, the Challenge keeps attracting a record number of entries, while it continues to help improve the industry. Shown above is the QDC team from B-O-C Lansing South. Story on p.26.

AUTOMOTIVE INDUSTRIES (ISSN 0273-656x) magazine is published monthly by Chilton Co., Chilton Way, Radnor, PA 19089. Chilton Company is a division of Capital Cities/ABC, Inc., New York, NY. Subscription rates: 1 yr. $49.95 US, $100.00 foreign. Phone (215) 964-4152. Second Class Postage paid at Wayne, PA 19087 and additional mailing offices. POSTMASTER: Send address changes to AUTOMOTIVE INDUSTRIES, Circulation Dept., Chilton Way, Radnor, PA 19089. © Chilton Company, 1989. Permission to photocopy for internal use or the internal use of specific clients is granted by Chilton Company for libraries and other users registered with the Copyright Clearance Center (CCC), provided that a base fee of $1.00 per copy of the article, plus 25¢ per page is paid to the CCC, 21 Congress St., Salem, MA 01970. Address special requests to The Editor. (0273-656x/85 $1.00 + 25¢)

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DIE CHANGE 1989

by JOHN McELROY

Every year our Die Change Challenge has grown by leaps and bounds, and this year is no exception: 14 different plants entered a total of 21 teams. They came from all over the US, Mexico and Canada.

More importantly, the competition hit a new level of intensity. For the first time (perhaps in the history of the industry) one of the teams broke through the one minute barrier! Just as impressively, we've also seen one-year productivity improvements that range from 15% to 60%!

But so much for the overview. Let's get to the specifics. And just so you know we're not favoring one plant over another, we'll present each team in the chronological order in which they participated.

Ford: Hermosillo, Mexico

When most Americans think about Mexico, they either conjure up images of illegal immigrants wading across the Rio Grande, or beautiful seaside resorts such as Cancun or Puerto Vallarta. But anyone visiting Ford's Hermosillo plant will come away with a totally new appreciation of what Mexico is capable of doing.

In every sense of the word, Hermosillo is a world-class facility. Ford's internal audits and the J.D. Power CSI index show that the Mercury Tracer, which is made here, has the second-best quality in its class, and is ninth best compared to all cars sold in the US. It's easy to see why.

The people who work here are well educated, highly trained, and intensely competitive. They rely heavily on statistical procedures to improve the manufacturing process. And every improvement, no matter how small, is considered important – they showed us one improvement that reduced the

Talk about continuous improvement! GM's Indy Truck & Bus stamping turn

You want competition?
This year's Challenge involved 14 plants and 21 teams.
You want continuous improvement?
We saw productivity gains up to 60%.
You want speed?
How does a 54-second die change sound?

in a flawless 6:48 time on the automated line, down from 30:40 last year.

die change time by only 0.15 minutes!

But accuracy counts, too. To eliminate mistakes during a die change, a template is placed over the control panel which covers up all but the switches needed for this particular die change. The template also has the proper readout written on it that every gauge should be showing. Now it's impossible to flick the wrong switch or make the wrong setting.

As a result, both teams from the Hermosillo plant turned in very competitive times: 4:04, and 4:44, respectively. To that we say: "*Saludos a todos*!"

Diamond-Star: Bloomington-Normal, Illinois

The Chrysler/Mitsubishi joint venture at Diamond-Star is not only a new entry to the Die Change Challenge, it's also the newest automotive plant in North America. Moreover, the press shop may be the most automated in the world. Coils are unrolled and automatically blanked. The blanks move to their storage area on AGVs, and in turn move from storage to the press line by AGVs. There they are automatically loaded into the press line where they come out the other end as body panels.

Some panels are automatically racked – they're literally untouched by human hands until final assembly. The racks are moved to another storage area by AGVs, and are computer sequenced to the body shop. Even with these large storage areas there is only a two-day inventory of panels. The goal is an eight-hour supply – very impressive.

All the presses at Diamond-Star are transfer lines and they're all made by Komatsu. The reasoning behind this is to keep a minimum of inventory to eliminate waste.

"If you don't need it, don't buy it. If you need it, buy the best there is,"

DIE CHANGE 1989

explains Roy Ames, D-S's branch manager of stamping.

The two-man team managed to turn in a time of 3:18, an incredible performance for an operation that's only been open for one year. And even more impressive when you consider that John McKenzie and Mike Rust, the two associates working on this line, had no prior stamping experience. Before coming to D-S John was a coal miner, Mike a farmer.

B-O-C South: Lansing, Michigan

Every time we visit B-O-C's Lansing Fab plant it looks a little brighter, a little cleaner and more organized.

"Those are the obvious improvements," says plant manager Mike Camp. "What may *not* be as obvious, but is more important, is how management and the union work together."

This year Lansing chose a seven-press line that changed from right-hand quarter panels to left-hand quarters. Anyone familiar with stamping operations knows quarter panels are the most difficult exterior panels to stamp on a car.

In addition, the dies on this line have to be moved by overhead crane. And the clamps must be manually bolted and unbolted.

Most plants wouldn't enter the Die Change Challenge if they didn't think they could win. But Lansing Fab uses the competition to develop team work, to improve its operations, and to use that new-found efficiency to in-source work. By any definition, that's winning.

Because of its die change improvements, Lansing Fab now uses a minimum of inventory between it and the Lansing Assembly plant located a mile down the road.

"We'd better get this die change going," says Jim Armstrong, glancing at his watch. "The body shop will run out of panels at 11:30 a.m."

Talk about just-in-time—it's now a quarter to 10!

As the die change gets underway, it's

obvious everyone is making sure everything gets done right the first time. They move carefully and deliberately. After all, one mistake and you've lost more time than you would have gained by hurrying.

As the team completes its work, the stopwatch clicks off at 27:50. That's 13.5% better than last time: a solid improvement, and one achieved through teamwork.

"I read where Maryann Keller's book (*Rude Awakening*) tells how GM spends too much on technology," notes Roger Johnson, the shop committeeman.

"Well here you're seeing 10 cent solutions to million dollar problems," he says.

B-O-C Reatta: Lansing, Michigan

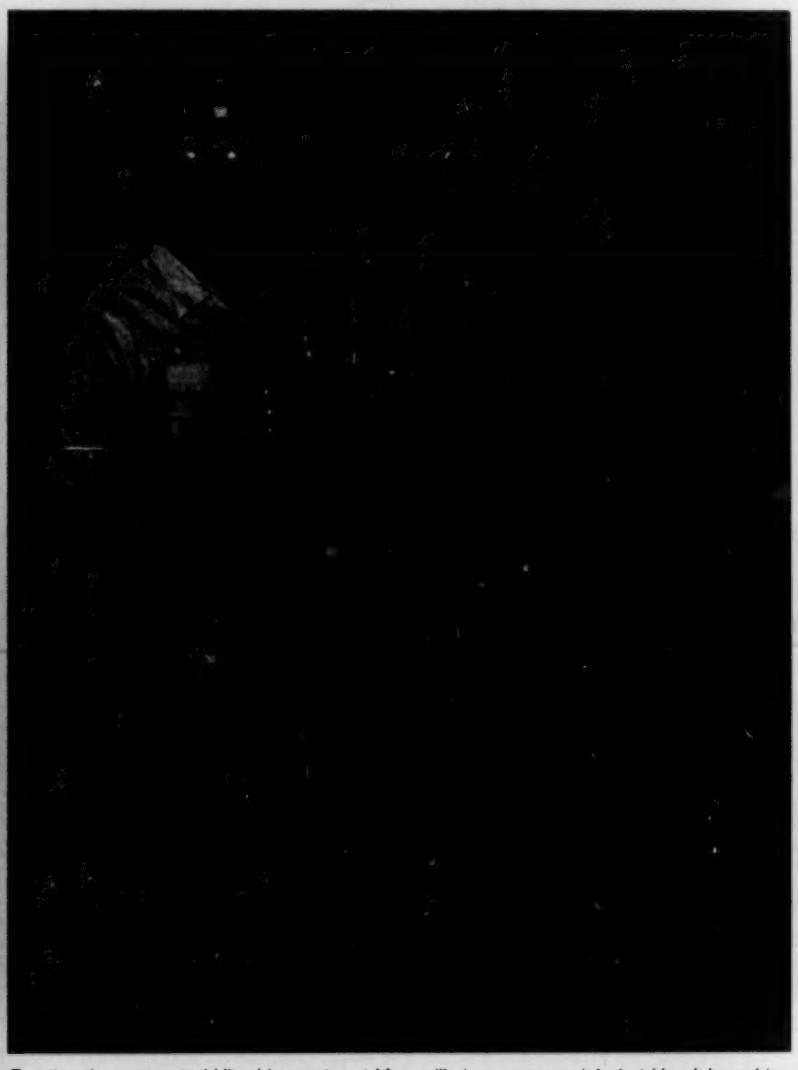
Anyone who thinks the UAW is an impediment to productivity should take a trip to the Reatta plant. The joint process at this place proves the union really can 'come to the party.' In fact, it has earned Reatta second place in our "Most Improved" category, with a 59.2% gain.

Consider this story. Last year the Reatta die change team needed two people to move a conveyor located at the end of the line. But by welding a towbar onto the conveyor, it's now automatically pushed out of the way as the die cart moves into place.

Conversely, as the die cart moves out, it pulls the conveyor back into place. Bloody simple, to be sure. But as a result, they don't need those two people anymore. In fact, these union people brag about how they eliminated those jobs. (No one was thrown out on the street; they were just assigned other work to do.)

And the improvements didn't stop there. Last year the start of the die change was signalled by a blinking red light at the head of the line. But that meant the team had to stand out in the aisle to watch for the light to start blinking. Then they would walk over to the presses to start working, which wasted precious time.

So the team installed a siren. Now they can stand right where they have to be, and start working the instant



Feeding the automated Hitachi monster at Marysville is a one-man job, but Honda's real improvement came on their tandem Danly line.

DIE CHANGE 1989

the siren sounds. To improve communication even more, the team members decided to wear wireless headsets. No more shouting or hand waving anymore. Now everyone can talk to each other in a normal voice. (When was the last time you were in a stamping plant where you could *talk* in a *normal* voice?)

Put together, all these improvements eliminated yet another job. And by allowing skilled tradesmen and production workers to work together, the Reatta team whittled this year's time down to 5:34—a 42% improvement! "I think it's great to throw out the lines of demarcation and see you all working together to get the job done," a proud Stan Pewoski, chairman of the shop committee, tells the team. And there's no question that they got the job done fast. Just after it was done, a B-O-C executive who had driven to the plant to watch it all happen walked up to the press line. He asked when it was all going to begin, only to be told it was over.

"Already?" he asked in disbelief, turned around, got back in his car, and drove off.

"You can't be six minutes late to a five minute die change," laughs plant manager Jim Rucker.

Mazda: Flat Rock, Michigan

Mazda's transfer line placed first in our "Most Improved" category and it's worth delving into the details of how they achieved their incredible 60.2% improvement in one year.

First off, they were able to reduce three people from the die change team. This was done by carefully analyzing what everyone was doing, and by simplifying each operation. Then they applied the kaizen process to take time out of the internal die change set-up.

For example, now they stop the press on the last panel, which eliminates one press cycle, and saves 20 seconds. Last year they had to wait for the computer program to automatically bleed air pressure out of the die cushion. But now they do it manually, which eliminates a step the computer goes through and speeds up the whole program.

Another change in procedure involves the fingers on the transfer mechanism. Previously the teams stored the fingers in the aisle next to the press. Now, they store the fingers in a cage at the front of the press, which means they only have to be moved about two feet instead of 20, which saves more precious seconds. And to get the die changers in and out of the presses faster, the teams took the latches off the doors, which are now held in place by the safety plugs. That saves more time.

Then, on Mazda's tandem press, potential confusion is eliminated by painting the automation arms red and blue. The red arms go on the south (warm) side of the press, the blue arms go on the north side (cold). This saves time because now it's hard to install the wrong arm on the wrong side.

After the teams brainstormed these improvements, they'd implement them. Immediately upon trying them

TRANSFER LINES

COMPANY	TIME	# PEOPLE	LINE	PANELS	STEEL	UAW LOCAL
GM Truck	2:50	6	Schuler	C/K Cab Corner	National	23
Diamond Star	3:18	2	Komatsu	Laser Hood/Tail	Nippon	2488
Mazda	4:27	3	Komatsu	Probe Doors	Nippon	3000
Honda	5:16	1	Hitachi-Zosen	Civic Doors	Inland	--
Nissan	5:32	2	Hitachi-Zosen	Sentra Doors	Nippon	--

DIE CHANGE TIME COMPARISON

RANK	COMPANY	PLANT	PRESS TYPE	TIME
1.	Nissan	Smyrna, TN	Tandem I	0:54
2.	Nissan	Smyrna, TN	Tandem II	0:57
3.	Honda I	Marysville, OH	Tandem	2:49
4.	GM Truck	Indianapolis, IN	Transfer	2:50
5.	Diamond-Star	Bloomington, IL	Transfer	3:18
6.	GM/Cadillac	Grand Blanc, MI	Tandem	3:46
7.	Chrysler	Twinsburg, OH	Tandem	3:53
8.	Ford	Hermosillo, MX	Tandem	4:04
9.	Mazda	Flat Rock, MI	Transfer	4:27
10.	Ford	Hermosillo, MX	Tandem	4:44
11.	Honda II	Marysville, OH	Transfer	5:16
12.	Nissan	Smyrna, TN	Transfer	5:32
13.	GM Reatta	Lansing, MI	Tandem	5:34
14.	Cosma/ Karmax	Milton, CN	Tandem	6:43
15.	GM/Truck	Indianapolis, IN	Tandem	6:48
16.	Mazda	Flat Rock, MI	Tandem	6:51
17.	Chrysler	Warren, MI	Tandem	7:16
18.	GM/Buick	Flint, MI	Tandem	15:33
19.	Chrysler	Sterling Hts, MI	Tandem	24:05
20.	GM/Cadillac	Grand Blanc, MI	Tandem	24:06
21.	GM/B-O-C	Lansing, MI	Tandem	27:50

out, they'd hold a team meeting to discuss how well it worked. Then they'd hold another brainstorming session. By diligently sticking to this process, the Flat Rock teams came up with their astonishing productivity improvements.

Karmax: Milton, Canada

It's unusual to see a stamping plant in the Die Change Challenge make parts for a vehicle that's not even in production. But Karmax, a division of Cosma International, is used to doing the unusual. In fact, it's one of their selling points.

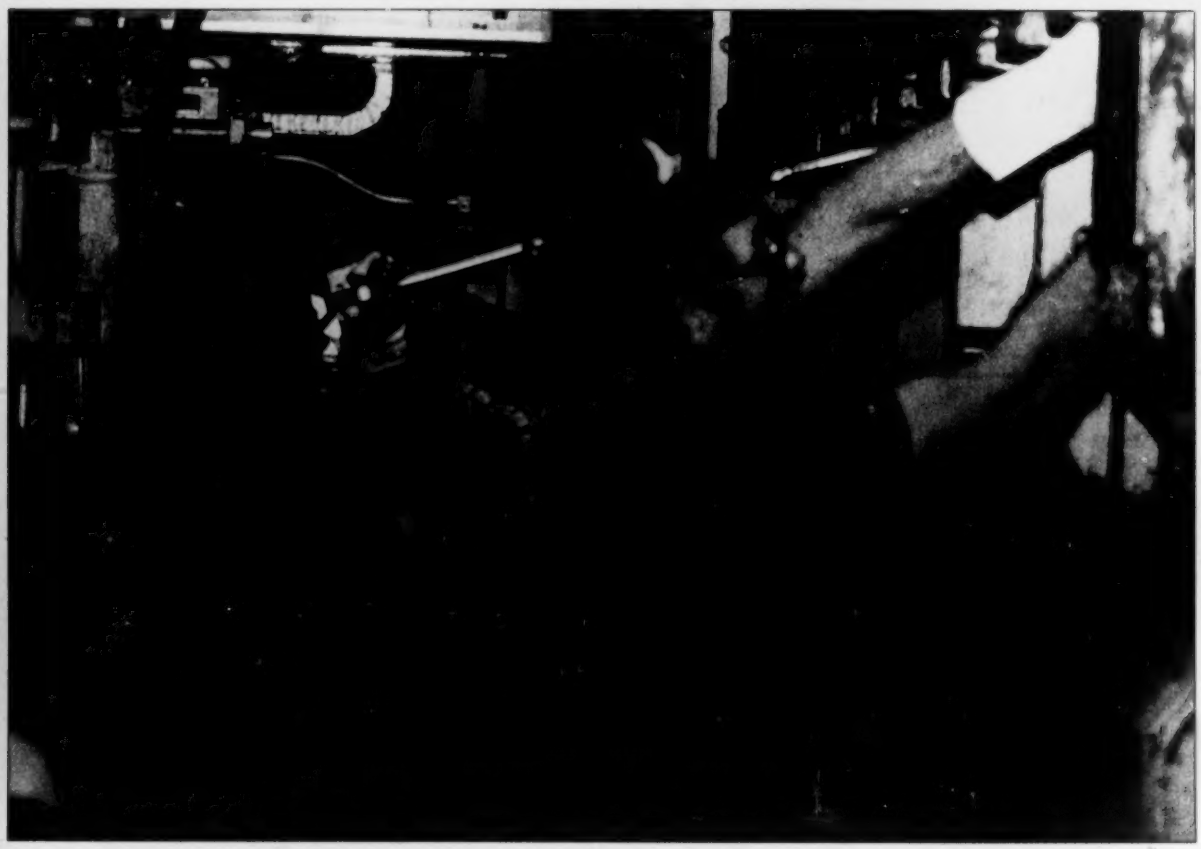
The panel that our Canadian friends decided to change during the '89 Challenge is the roof panel for Ford's UN-46, the replacement for the Bronco II, which will be re-named Explorer when it debuts next spring.

As anyone involved in stamping can appreciate, it would have been a lot easier for Karmax to change older dies that everyone was familiar with. But Karmax, which has only stamped out about 500 panels on these dies, used the Die Change Challenge to help get the UN-46 dies production-ready.

"If you are in a five-year program and you spend the first two years getting efficient, then you only get three years to work at getting profitable. You can't do that. You have to be ready and efficient from Job One," explains Dick DeMara. Even more, this was a roof panel, which also adds to the difficulty.

MAUAL PRESS LINES

COMPANY	TIME	# PEOPLE	PRESS	TYPE	# PRESSES	BOLSTERS	CLAMPS	PANELS	STEEL	UAW LOCAL
Cadillac Grnd Blanc I	3:46	21	Danly	Tandem	5	None	Manual Doors	Deville	Bethle-hem	1292
Chrysler Sterling Hts.	24:05	40	Schuler	Tandem	5	Rolling	Manual	C-Y Body-sides	US Steel	1264
Cadillac Grnd Blanc II	24:06	9	Danly	Tandem	7	None	Manual	Seville Rear 1/4	Bethle-hem	1292
B-O-C Lansing	27:50	12	Verson	Tandem	7	None	Manual	N-Car Rear 1/4	Inland	652



Buick City realized a 14.8% productivity gain over last year.

DIE CHANGE 1989

"We chose a roof panel because it's a big, complex panel. And we chose that because that's what we're known for," notes plant manager Ueli Spring. Yet even with these "handicaps" Karmax managed to achieve an impressive 45.6% productivity improvement over last year.

"Whew, that's very good – but nerve-racking," sighs Yvonne McLauchlan, a quality inspector, as the die change is completed.

Chrysler: Warren, Michigan

A huge crowd of spectators greeted us at Chrysler's Warren Stamping plant. And we were greeted with a display of creative ingenuity. This year the Warren plant decided to enter a press line that had never been set up for quick die change, with dies that were never designed to be changed quickly, either.

So to get themselves competitive, the team – made up completely of volunteers – went to work to convert the line for quick die changes. All the changes were done in-house.

First, they commonized everything: bucks, draws, shut heights, and pass heights. Then they took die-carts that were lying out in the yard because they were considered obsolete, and rebuilt them – even though they had approval to buy new ones. The skilled trades workers on the team found a way to make the carts move 10 times faster than their original design.

"When the people build it themselves, they know it so well that you get better results than with something you bought," explained one of the workers.

To commonize the locator points on the dies, the team installed plates (that came from a closed AMC stamping plant) on top of the die. And they put rollers under the dies in the press so they can be moved in and out more easily. Then they modified the blank feeder table so it could be easily moved by one man, instead of by four. And they re-wired the automation so it didn't have to be unplugged to be moved.

The team, with 27 people on it, is bigger than it has to be. But that's by design. They feel it is more important to get more people involved than to leave them out and do better in the

Lansing South still uses overhead cranes, but teamwork paid off: a 13.5% productivity improvement versus 1988.

Die Change Challenge.

It certainly paid off—what took eight hours to do before they made all the changes is now done in seven minutes. "What was a dream a year ago is reality today," beamed one of the team members.

Cadillac: Grand Blanc, Michigan

A visit to Cadillac Stamping is always good for the soul. You can't come out of this plant without being on an emotional high, because the teamwork and camaraderie that exists at this plant is contagious.

Not only did last year's team knock a minute off their time, they did it with one less person—good for a solid 28% improvement in productivity. This year, the plant entered a second team which worked on a totally manual line, one that requires an overhead crane to move all the dies.

You can't do that fast. Though they knew going in that it would be tough to win the Die Change Challenge, so they set out to beat their own internal goal: 48:00.

It was important for this team to hit its goal, because this line is pioneering an inventory pull system at GM called assured scheduling. The process consists of four loops: the outside suppliers, the blanking line, the stamping line and the Hamtramck assembly plant. The manufacturing schedule is set by the assembly plant, on a daily basis, and each loop only builds what the downstream operation needs.

GM claims this will help cut inventory levels in half, which will also cut costs and boost quality.

As our stopwatch clicked off in 24:00, it was impressive to see that Grand Blanc had easily beaten their internal goal. "That's just a start," says a team member. "There's always room for improvement."

GM Truck & Bus: Indianapolis, Indiana

The Truck & Bus operation in Indianapolis is impressive. It's huge: 1.3 million ft² under roof, and 39 press lines. They convert 2000 tons of steel into product *every day!* But just because you're big doesn't automatically make you good. And this year, Indianapolis Truck & Bus was out for blood.

Last year the team encountered an

TANDEM LINES W/DIE CARTS

COMPANY	TIME	# PEOPLE	PRESS	TYPE	# PRESSES	BOLSTERS	CLAMPS	PANELS	STEEL	UAW LOCAL
Reatta	5:38	7	Danly	Tandem	3	Die Carts	Auto	Reatta Doors	Armco	1618
Chrysler Warren	7:16	27	USI	Tandem	5	Die Carts	Manual	T-111 Doors	National	869
Buick City	15:33	18	Danly	Tandem	6	Die Carts	Manual	LeSabre Rear ¼	LTV	599

AUTOMATED TANDEM LINES

COMPANY	TIME	# PEOPLE	PRESS	TYPE	# PRESSES	BOLSTERS	CLAMPS	PANELS	STEEL	UAW LOCAL
Nissan I	0:54	8	Hitachi-Zosen	Tandem	5	Rolling	Auto	King Cab Bedside	Nippon	--
Nissan II	0:57	6	Hitachi	Tandem	5	Rolling	Auto	Sentra Fenders	Nippon	--
Honda	2:49	7	Danly	Tandem	3	Rolling	Semi-Auto	Civic Hood	Inland	--
Chrysler Twinsburg	3:53	18	Schuler	Tandem	5	Rolling	Auto	P-Car Doors	National	122
Ford Hermosillo I	4:04	7	Komatsu	Tandem	5	Rolling	Auto	Tracer Doors	Nippon	--
Ford Hermosillo II	4:44	7	Komatsu	Tandem	5	Rolling	Auto	Tracer Doors	Nippon	--
GM Truck	6:48	10	Danly	Tandem	5	Rolling	Auto	C/K Doors	Bethlehem Thyssen	23
Mazda	6:51	3	Komatsu	Tandem	5	Rolling	Auto	Probe Rear ¼	Sumitomo	3000

DIE CHANGE 1989

electrical glitch that slowed their die change to 30 minutes. So they diagnosed the cause of the problem and rewired the presses so it could never happen again.

But they weren't content just to fix the problem. They continued to improve the die change process. For example, the team reprogrammed their computers so they could use one program. That eliminated wasted time waiting for the next program to download. Then they put two motors on each bolster to speed them up.

After that, all the hydraulic connections were moved to the same side of each bolster so no one had to walk around to disconnect them. And all the electrical connectors were changed to plug in the same way. As a result, the team's die change time dropped to under 7:00!

Indianapolis also entered a new team this year, on a Schuler transfer press. As it turned out, it was the fastest transfer press operation we saw this year. But to the team members, that was not the most impressive aspect of their die change.

"The big lesson was not our time, but what we learned getting ready for the Challenge and how we can apply those lessons to other lines in the plant," explains a team member.

"A year ago we couldn't even do a quick die change. Then we got down to 30 minutes, then took that down to 15 minutes. I thought that was excellent. I laughed to myself when the team set a goal of four minutes. But look, here we did it in 2:50!"

Nissan: Smyrna, Tennessee

What's the right word to describe Nissan's die change teams? Incredible? Unbelievable? Fantastic?

Last year the Smyrna team turned in a time of 1:20, and frankly we didn't think that it would be possible to change dies any faster. But these guys set out to rewrite the book on die changes. And rewrite it they did.

Today the automotive industry's target can no longer be measured by SMED—single minute exchange of dies. Now it has to be SSED—single *second* exchange of dies.

Not only did Nissan break through the one minute barrier, the plant did it twice! The first team took 57 seconds; the second team took only :54.

Obviously, both teams were totally elated with their performance. "Want my autograph?" one the team members asked me as he strutted by.

But though they were elated, they weren't completely satisfied.

"We made two major mistakes," said one of the night shift team members. "We should have knocked off another seven seconds."

"Hey, that's OK," retorted another. "If we did everything right, it would be too hard to beat *next year*."

Honda: Marysville, Ohio

At its Marysville plant, Honda has the biggest stamping press in the world—a 4800 metric ton monster. Yet, even though this Hitachi is so massive, it is also so automated that Honda can do the die change with only one person.

The Marysville die change starts as an associate twists a knob on the control panel. Then, with a loud hiss, the battleship-sized press comes to a stop. Loud clangs emanate from deep inside the press. Long rows of clamps rotate backwards in perfect unison.

With a whoosh, the rams go up. The transfer mechanism cycles back onto the bolster, the scrap chutes drop down while the safety gates go up. And as the warning horn starts to blare, the old bolsters glide out of the press, with the new ones behind them.

Now the entire process is reversed. And as the new dies are automatically clamped up, the transfer mechanism begins to move again, surprisingly fast for such a massive piece of equipment. And as the associate walks to the end of the line, the first panel comes off in 5:16. But that's not all.

Honda also entered its tandem Danly line, the only line that has been entered in every Die Change Challenge. Talk about continuous improvement: The first year it took 5:14, the second year 4:38, last year that dropped to 3:57. And this year they shaved it down to 2:49.

In fact, the Marysville die changers got their bolsters moving so fast that they were hitting their stops so hard they ran right over them! So the team installed switches that slow the bolsters down before their stops.

Funny, that's probably the first time we've encountered a team that had to slow down a QDC in order to speed up.

Chrysler: Twinsburg, Ohio

We weren't sure what to expect at Chrysler's Twinsburg Stamping plant since this was their first year in the Die Change Challenge. The team sure didn't give us much time to watch them in operation, because 3:53 after they started, they were done!

The instant the press line came to a stop, the team launched right into their die change with choreographed precision. With a blur of movement, dies were shuttled in and out of place. And as the first panel started coming down the line, a large group of people followed it from press to press, looking for all the world like a group of nervous fathers waiting for their first-born in a delivery room.

"I tell 'ya, I'm so proud of this team I'm having a helluva time keeping my eyes dry. I love each and every one of you," the plant manager told them when it was over.

The team responded with whooping cheers and applause. And they meant it, each and every one of them.

Chrysler:
Sterling Heights, Michigan

We see an amazing variety of press lines during the Die Change Challenge, but few are as impressive as the traditional-type presses at Chrysler's Sterling Heights plant.

Whomp! Bam! Thud! Watching this line in operation, for us, is almost an intimidating experience.

But not for the die change team. They go about their business, working methodically and diligently. Any time a problem crops up no one panicks. And there are extra hands ready to pitch in to keep things moving.

As soon as a press is ready, a team member stands back and signals down the line with a 'thumbs-up.' As the first blank is fed into the first press a group of people walks down the line with it. With every stroke of each press it begins to look less like a sheet of steel and more like a body panel.

With each stroke more value is added to that panel. And when our stopwatch clicked off at 24:00, there was a lot of satisfaction with the accomplishment. It wasn't long ago that the same operation took 11 hours.

Anybody who thinks the UAW hinders efficiency hasn't been to the Reatta Craft Center. These guys improved their productivity by over 59%!

MOST IMPROVED DIE CHANGE, 1988-1989

RANK	COMPANY	PLANT	% IMPROVEMENT
1.	Mazda	Flat Rock	60.2%
2.	GM	Reatta	59.2%
3.	Honda II	Marysville	56.8%
4.	Nissan I	Smyrna	52.5%
5.	Karmax	Milton	45.6%
6.	GM	Gr Blanc I	28.0%
7.	GM	Buick City	14.8%
8.	Honda I	Marysville	12.4%

DIE CHANGE PRODUCTIVITY COMPARISON

RANK	COMPANY	PRESS TYPE	MAN MIN./ CHANGE
1.	Honda II	Transfer	5.2
2.	Nissan II	Tandem	5.7
3.	Diamond-Star	Transfer	6.6
4.	Nissan I	Tandem	7.2
5.	Nissan	Transfer	11.0
6.	Mazda	Transfer	13.35
7.	Gm Truck	Transfer	16.90
8.	Honda I	Tandem	19.70
9.	Mazda	Tandem	20.55
10.	Ford I	Tandem	28.40
11.	Ford II	Tandem	33.10
12.	GM-Reatta	Tandem	38.90
13.	Karmax	Tandem	47.00
14.	GM-Truck	Tandem	68.00
15.	Chrysler Twinsburg	Tandem	69.80
16.	GM-Cadillac I	Tandem	79.00
17.	Chrysler-Warren	Tandem	196.10
18.	GM-Cadillac II	Tandem	216.90
19.	GM-Buick	Tandem	279.90
20.	GM-Lansing	Tandem	333.90
21.	Chrysler-Sterling	Tandem	963.30

B-O-C Buick City: Flint, Michigan

Buick City is on a natural high that began earlier this summer. That's when J.D. Power's Initial Quality Survey rated the Buick LeSabre as the second best quality car sold in the US. That one little report created such a surge in LeSabre sales that the plant has had a hard time keeping up with demand. And that has put pressure on the die change team to consistently do quick die changes.

"The guys had to find new ways to get some more efficiency, but we've got good people here," explains one of the managers. "They found ways to speed up the die carts and they also improved the programming. But more importantly, with sales going up, morale is going up with it."

As a result of their changes, the team achieved a solid 14.8% productivity improvement in one year. But they aren't satisfied. "I know we can do better. Wait until next year," says one team member.

Final Results

The 1989 Die Change Challenge has become something of a challenge for us at *Automotive Industries*. The competition this year was more intense than we had ever seen before. And you could tell it meant that much more to every team that entered. That makes picking a winner all that more difficult. But here are our choices:

- The Most Exciting Team In Action is undoubtedly Grand Blanc's. This team's enthusiasm is so contagious it makes you want to stand up and cheer them to go faster.
- The Most Improved honors goes to Mazda's transfer line team, which achieved a one-year improvement of 60.2%. But the Reatta team also gets an Honorable Mention. Its 59.2% improvement was second to Mazda.
- The Fastest And Most Impressive Team, or in this case Teams, are Nissan's. They're phenomenal. Whenever anyone asks us how it's possible they can change dies so quickly, our response is usually something like, "You just have to see it to believe it."

But as we've said for the last four years, we're not just looking for the fastest teams. We're looking for the best. And this year the Most Efficient Die Change honor goes to Honda's one-man die change team on Marysville's transfer press. AI

AUTOMAKER QUARTERLY REPORT

by Dr. THOMAS O'GRADY

After an industry-wide sales slump during the first half of the year, third quarter 1989 passenger car volume rose 2.8% over total third quarter '88 volume.

Heavier incentive programs from both domestic and foreign automakers this year, consumer anticipation of impending price hikes, and new 1990 models, particularly those in the sporty segment, trickling onto the market helped to boost overall sales.

Ford led the industry in increased passenger car market share for the third quarter, followed by gains at Toyota and GM. But total American share of the market continued to drop as Big Three automakers increased their sales of transplant vehicles built by Japanese companies.

Total transplants captured an 11.4% share of the US passenger car market in third quarter '89, up from a 9.0% share in the year ago period. Five of the 13 transplant models currently wear domestic nameplates.

Total American share of the market continues to drop, as the Big Three increase their sales of transplant vehicles.

Toyota posted a strong 9.4% rise in volume for the quarter, aided by increased domestic capacity at its Georgetown, KY and Cambridge, Ontario plants this year, as well as the strong initial launch of Lexus cars.

GM improved its third quarter sales performance this year, not only with incentive programs, but also through several better positioned products, particularly from Chevrolet/Geo, Buick and Cadillac.

Meanwhile, market shares for Isuzu, Mazda, Hyundai, Subaru and Volkswagen are still dropping rapidly. Mazda and Subaru, however, have new 1990 models that could be strong enough to turn sales around.

The publishing division of Integrated Automotive Resources, Inc., is pleased to introduce its industry newsletter, *Fast Track News*. Available in Sales and Production editions, *Fast Track News* contains automotive data not available in any other publication. Sales and Production Editions (60 issues), $399; Sales Edition (36 issues), $295; Production Edition (24 issues), $195. Call IAR at (215) 687-1559. AI

Dr. Thomas O'Grady is president and chief analyst of Integrated Automotive Resources, Inc. in Wayne, PA.

WHAT'S HOT!
Domestic Auto Sales
3rd Quarter 1989

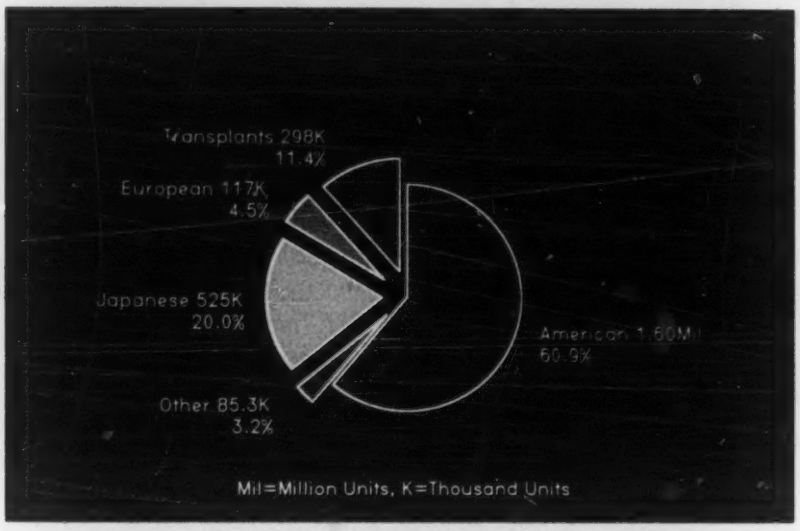
Carline	'89	'88	% Change
Escort	98,767	102,539	-3.68%
Accord	96,907	90,849	6.67%
Taurus	87,087	75,944	14.67%
Corsica/ Beretta	80,572	84,913	-5.11%
Cavalier	76,010	73,560	3.33%
Camry*	73,957	69,906	23.60%
Civic*	68,019	42,798	58.93%
Tempo	59,651	74,838	-20.29%
Celebrity	55,192	67,216	-17.89%
Sentra*	53,599	66,789	-19.75%

* – Includes imports

US Passenger Car Market Shares
3rd Quarter, 1989

Manufacturer	'89 Sales	% Total	'88 Sales	% Total	% Change
General Motors	928,037	35.33%	892,133	34.91%	4.02%
Ford	586,327	22.32%	547,891	21.44%	7.02%
Chrysler	263,127	10.02%	275,124	10.77%	-4.36%
Honda/Acura	209,518	7.98%	196,596	7.69%	6.57%
Toyota/Lexus	190,001	7.23%	173,660	6.80%	9.41%
Nissan	136,174	5.18%	128,580	5.03%	5.91%
Mazda	63,116	2.40%	67,298	2.63%	-6.21%
Hyundai	47,752	1.82%	60,473	2.37%	-21.04%
Subaru	37,451	1.43%	40,695	1.69%	-16.77%
VW/Audi	36,786	1.40%	44,200	1.73%	-7.97%
TOTAL CARS	2,626,787	100%	2,555,655	100%	2.78%

(Continued p.74)



Passenger Car Market Share By Geographic Base

Third Quarter 1989

Manufacturers	Total Sales	Total Market Share
American	1,600,493	60.93%
Japanese	525,354	20.00%
European	117,632	4.48%
Transplants	298,023	11.35%
Other Imports	85,285	3.24%
Total	2,626,787	100.00%

3RD QUARTER 1989 DOMESTIC LIGHT TRUCK PRODUCTION*

COMPANY	FULL-SIZE TRUCKS	COMPACT TRUCKS	FULL-SIZE VANS	COMPACT VANS	FULL-SIZE SPORTS UTILITY	COMPACT SPORTS UTILITY	TOTAL 3Q '89	TOTAL 3Q '88
CHEVROLET	137,176[1]	51,919	32,211	42,859	30,095	42,208	336,468	355,737
FORD	132,413	53,508	40,212	42,382	12,967	19,170	300,652	332,054
GMC	46,738[1]	14,589	12,080	10,660	10,980	12,630	107,677	106,150
CHRYSLER	19,116	19,155	19,498	97,478	—	—	155,247	125,401
JEEP	—	5,117	—	—	1,823	63,941	70,881	67,425
NISSAN	—	25,965	—	—	—	—	25,965	14,989
PONTIAC	1,366	—	—	—	—	—	1,366	—
OLDS	737	—	—	—	—	—	737	—

[1]Includes Suburban and P-model. *Built in the US and Canada.